



BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XD829

Taking of Marine Mammals Incidental to Specified Activities; Construction of the East Span of the San Francisco-Oakland Bay Bridge

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; request for comments.

SUMMARY: NMFS has received a request from the California Department of Transportation (CALTRANS) for an incidental take authorization to take small numbers of California sea lions, Pacific harbor seals, harbor porpoises, and gray whales, by harassment, incidental to construction activities associated with the East Span of the San Francisco-Oakland Bay Bridge (SF-OBB) in California. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an authorization to CALTRANS to incidentally take, by harassment, small numbers of marine mammals for a period of 1 year.

DATES: Comments and information must be received no later than *[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]*.

ADDRESSES: Comments on the application should be addressed to Rob Pauline, Permits and Conservation Division, Office of Protected Resources, National Marine

Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910-3225. The mailbox address for providing email comments is *itp.pauline@noaa.gov*. NMFS is not responsible for e-mail comments sent to addresses other than the one provided here. Comments sent via e-mail, including all attachments, must not exceed a 10-megabyte file size.

Instructions: All comments received are a part of the public record and will generally be posted to <http://www.nmfs.noaa.gov/pr/permits/incidental/construction.htm>. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

The application used in this document may be obtained by visiting the internet at: <http://www.nmfs.noaa.gov/pr/permits/incidental/construction.htm>. Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Robert Pauline, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings

are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the U.S. can apply for a one-year authorization to incidentally take small numbers of marine mammals by harassment, provided that there is no potential for serious injury or mortality to result from the activity. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization.

Summary of Request

On December 15, 2014 CALTRANS submitted its most recent request to NOAA requesting an IHA for the possible harassment of small numbers of California sea lions (*Zalophus californianus*), Pacific harbor seals (*Phoca vitulina richardsii*), harbor

porpoises (*Phocoena phocoena*), and gray whales (*Eschrichtius robustus*) incidental to construction associated with a replacement bridge for the East Span of the SF-OBB, in San Francisco Bay (SFB, or Bay), California.

Description of the Specified Activity

An IHA was previously issued to CALTRANS for this activity on January 8, 2014 (79 FR 2421; January 14, 2014), based on activities described on CALTRANS' IHA application dated April 13, 2013. That IHA expired on January 7, 2015. Since the construction activity would last for approximately an additional two years after the expiration of the current IHA, CALTRANS requests to renew its IHA. In its IHA renewal request, CALTRANS also states that there has been no change in the scope of work for the SF-OBB Project from what was outlined in its April 13, 2013 IHA application project description, the *Federal Register* notice for the proposed IHA (78 FR 60852; October 2, 2013), and the *Federal Register* notice for the issuance of that IHA (79 FR 2421; January 14, 2013). This stage of the project will include the mechanical dismantling of marine foundations of the East Span of the bridge as well as the installation of approximately 200 steel piles. These activities will be covered under the proposed IHA. Refer to these documents for a detailed description of CALTRANS' SF-OBB construction activities.

Construction activities for the replacement of the SF-OBB east span commenced in 2002 and are expected to be completed in 2016 with the completion of the bike/pedestrian path and eastbound on ramp from Yerba Buena Island. The new east span is now open to traffic. On November 10, 2003, NMFS issued the first project-related IHA to the Department, authorizing the take of small numbers of marine mammals incidental

to the construction of the SFOBB Project. The Department has been issued a total of seven subsequent IHAs for the SFOBB Project to date, excluding the application currently under review.

Description of Marine Mammals in the Area of the Specified Activity

General information on the marine mammal species found in California waters can be found in Carretta *et al.* 2013, which is available at the following URL: <http://www.nmfs.noaa.gov/pr/sars/pdf/pacific2013.pdf>. Refer to that document for information on these species.

The marine mammals most likely to be found in the SF-OBB area are the California sea lion, Pacific harbor seal, and harbor porpoise. From December through May gray whales may also be present in the SF-OBB area. Information on California sea lion, harbor seal, and gray whale was provided in the November 14, 2003 (68 FR 64595), ***Federal Register*** notice; information on harbor porpoise was provided in a Supplemental Environmental Assessment (SEA), which analyzed the potential impacts to marine mammals that would result from the modification of the original action. A Finding of No Significant Impact (FONSI) was signed on August 5, 2009. These documents were referenced in the December 13, 2010 (75 FR 77617) **Federal Register** notice of IHA. A copy of the SEA and FONSI is available upon request.

Potential Effects on Marine Mammals and Their Habitat

CALTRANS and NMFS have determined that open-water pile driving and pile removal, as well as dredging and dismantling of concrete foundation of existing bridge by saw cutting, flame cutting, mechanical splitting, drilling, pulverizing and/or hydro-cutting, as outlined in the project description, have the potential to result in behavioral harassment

of California sea lions, Pacific harbor seals, harbor porpoises, and gray whales that may be swimming, foraging, or resting in the project vicinity while pile driving is being conducted.

Marine mammals exposed to high intensity sound repeatedly or for prolonged periods can experience hearing threshold shift (TS), which is the loss of hearing sensitivity at certain frequency ranges (Kastak *et al.* 1999; Schlundt *et al.* 2000; Finneran *et al.* 2002; 2005). TS can be permanent (PTS), in which case the loss of hearing sensitivity is unrecoverable, or temporary (TTS), in which case the animal's hearing threshold will recover over time (Southall *et al.* 2007). Since marine mammals depend on acoustic cues for vital biological functions, such as orientation, communication, finding prey, and avoiding predators, marine mammals that incur PTS or TTS may have reduced fitness in survival and reproduction, either permanently or temporarily. Repeated noise exposure that leads to TTS could cause PTS.

When PTS occurs, there is physical damage to the sound receptors in the ear. In severe cases, there can be total or partial deafness, while in other cases the animal has an impaired ability to hear sounds in specific frequency ranges (Kryter, 1985). There is no specific evidence that exposure to pulses of sound can cause PTS in any marine mammal. However, given the possibility that mammals close to a sound source can incur TTS, it is possible that some individuals might incur PTS. Single or occasional occurrences of mild TTS are not indicative of permanent auditory damage, but repeated or (in some cases) single exposures to a level well above that causing TTS onset might elicit PTS.

Relationships between TTS and PTS thresholds have not been studied in marine mammals but are assumed to be similar to those in humans and other terrestrial mammals,

based on anatomical similarities. PTS might occur at a received sound level at least several decibels above that inducing mild TTS if the animal were exposed to strong sound pulses with rapid rise time. Based on data from terrestrial mammals, a precautionary assumption is that the PTS threshold for impulse sounds (such as pile driving pulses as received close to the source) is at least 6 dB higher than the TTS threshold on a peak-pressure basis and probably greater than 6 dB (Southall *et al.*, 2007). On a sound exposure level (SEL) basis, Southall *et al.* (2007) estimated that received levels would need to exceed the TTS threshold by at least 15 dB for there to be risk of PTS. Thus, for cetaceans, Southall *et al.* (2007) estimate that the PTS threshold might be an M-weighted SEL (for the sequence of received pulses) of approximately 198 dB re 1 $\mu\text{Pa}^2\text{-s}$ (15 dB higher than the TTS threshold for an impulse). Given the higher level of sound necessary to cause PTS as compared with TTS, it is considerably less likely that PTS could occur.

Measured source levels from impact pile driving can be as high as 214 dB re 1 μPa @ 1 m. Although no marine mammals have been shown to experience TTS or PTS as a result of being exposed to pile driving activities, experiments on a bottlenose dolphin (*Tursiops truncatus*) and beluga whale (*Delphinapterus leucas*) showed that exposure to a single water gun pulse at a received level of 207 kPa (or 30 psi) peak-to-peak (p-p), which is equivalent to 228 dB (p-p) re 1 μPa , resulted in a 7 and 6 dB TTS in the beluga whale at 0.4 and 30 kHz, respectively. Thresholds returned to within 2 dB of the pre-exposure level within 4 minutes of the exposure (Finneran *et al.* 2002). No TTS was observed in the bottlenose dolphin. Although the source level of pile driving from one hammer strike is expected to be much lower than the single watergun pulse cited here,

animals exposed for a prolonged period to repeated hammer strikes could receive more noise exposure in terms of sound exposure level (SEL) than from the single watergun pulse (estimated at 188 dB re 1 $\mu\text{Pa}^2\text{-s}$) in the aforementioned experiment (Finneran *et al.* 2002).

Noises from dismantling of marine foundations by mechanical means include, but are not limited to, saw cutting, mechanical splitting, drilling and pulverizing. Saw cutting and drilling constitute non-pulse noise, whereas mechanical splitting and pulverizing constitute impulse noise. Although the characteristics of these noises are not well studied, noises from saw cutting and drilling are expected to be similar to vibratory pile driving, and noises from mechanical splitting and pulverizing are expected to be similar to impact pile driving, but at lower intensity, due to the similar mechanisms in sound generating but at a lower power outputs. CALTRANS states that drilling and saw cutting are anticipated to produce underwater sound pressure levels (SPLs) in excess of 120 dB RMS, but are not anticipated to exceed the 180 dB re 1 μPa (RMS). The mechanical splitting and pulverizing of concrete with equipment such as a hammer hoe has the potential to generate high sound pressure levels in excess of 190 dB re 1 μPa (RMS) at 1 m.

However, in order for marine mammals to experience TTS or PTS, the animals have to be close enough to be exposed to repeated high intensity pulsed noise levels for prolonged period of time. Based on the best scientific information available, the expected received sound levels are far below the threshold that could cause TTS or the onset of PTS.

In addition, chronic exposure to excessive, though not high-intensity, noise could cause masking at particular frequencies for marine mammals that utilize sound for vital

biological functions. Masking can interfere with detection of acoustic signals such as communication calls, echolocation sounds, and environmental sounds important to marine mammals. Therefore, under certain circumstances, marine mammals whose acoustical sensors or environment are being severely masked could also be impaired from maximizing their performance fitness in survival and reproduction.

Masking occurs at the frequency band which the animals utilize. Therefore, since noise generated from in-water pile driving during the SF-OBB construction activities is mostly concentrated at low frequency ranges, it may have less effect on high frequency echolocation sounds by harbor porpoises. However, lower frequency noises are more likely to affect detection of communication calls and other potentially important natural sounds such as surf and prey noise. It may also affect communication signals when they occur near the noise band and thus reduce the communication space of animals (e.g., Clark *et al.* 2009) and cause increased stress levels (e.g., Foote *et al.* 2004; Holt *et al.* 2009).

Masking can potentially impact the species at population, community, or even ecosystem levels, as well as individual levels. Prolonged masking affects both senders and receivers of the signals and could have long-term effects on marine mammal species and populations. Recent science suggests that low frequency ambient sound levels have increased by as much as 20 dB (more than 3 times in terms of SPL) in the world's oceans from pre-industrial periods, and most of these increases are from distant shipping (Hildebrand 2009). All anthropogenic noise sources, such as those from vessels traffic, pile driving, dredging, and dismantling existing bridge by mechanic means, contribute to the elevated ambient noise levels, thus intensifying potential for masking.

Nevertheless, the sum of noise from the proposed SF-OBB construction activities is confined in an area of inland waters (San Francisco Bay) that is bounded by landmass, therefore, the noise generated is not expected to contribute to increased ocean ambient noise. Due to shallow water depth near the Oakland shore, dredging activities are mainly used to create a barge access channel to dismantle the existing bridge. Therefore, underwater sound propagation from dredging is expected to be poor due to the extreme shallowness of the area to be dredged.

Finally, exposure of marine mammals to certain sounds could lead to behavioral disturbance (Richardson *et al.* 1995), such as: changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities, changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping), avoidance of areas where noise sources are located, and/or flight responses (e.g., pinnipeds flushing into water from haulouts or rookeries).

The onset of behavioral disturbance from anthropogenic noise depends on both external factors (characteristics of noise sources and their paths) and the receiving animals (hearing, motivation, experience, demography) and is also difficult to predict (Southall *et al.* 2007), especially if the detected disturbances appear minor. The consequences of behavioral modification could be expected to be biologically significant if the change affects growth, survival, or reproduction. Some of these significant behavioral modifications include:

- Drastic change in diving/surfacing patterns (such as those thought to be causing beaked whale stranding due to exposure to military mid-frequency tactical sonar);
- Habitat abandonment due to loss of desirable acoustic environment; and
- Cessation of feeding or social interaction.

The proposed project area is not believed to be a prime habitat for marine mammals, nor is it considered an area frequented by marine mammals. Therefore, behavioral disturbances that could result from anthropogenic noise associated with SF-OBB construction and dismantling activities are expected to affect only a limited number of marine mammals on an infrequent basis.

Currently NMFS uses 160 dB re 1 μ Pa (RMS) at received level for impulse noises (such as impact pile driving, mechanic splitting and pulverizing) as the onset of marine mammal behavioral harassment, and 120 dB re 1 μ Pa (RMS) for non-impulse noises (vibratory pile driving, saw cutting, drilling, and dredging).

As far as airborne noise is concerned, based on airborne noise levels measured and on-site monitoring conducted during 2004 under a previous IHA, noise levels from the East Span project did not result in the harassment of harbor seals hauled out on Yerba Buena Island (YBI). Also, noise levels from the East Span project are not expected to result in harassment of the sea lions hauled out at Pier 39 as airborne and waterborne sound pressure levels (SPLs) would attenuate to levels below where harassment would be expected by the time they reach that haul-out site, 5.7 km (3.5 miles) from the project site. Therefore, no pinniped hauled out would be affected as a result of the proposed pile-driving. A detailed description of the acoustic measurements is provided in the 2004

CALTRANS marine mammal and acoustic monitoring report for the same activity (CALTRANS 2005).

Short-term impacts to habitat may include minimal disturbance of the sediment where individual bridge piers are constructed. Long-term impacts to marine mammal habitat will be limited to the footprint of the piles and the obstruction they will create following installation. However, this impact is not considered significant as the marine mammals can easily swim around the piles of the new bridge, as they currently swim around the existing bridge piers.

Proposed Mitigation Measures

In order to issue an incidental take authorization under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses.

For the proposed CALTRANS SF-OBB construction activities, CALTRANS worked with NMFS and proposed the following mitigation measures to minimize the potential impacts to marine mammals in the project vicinity. The primary purpose of these mitigation measures is to detect marine mammals within or about to enter designated exclusion zones corresponding to NMFS current injury thresholds and to initiate immediate shutdown or power down of the piling hammer, making it very unlikely potential injury or TTS to marine mammals would occur, and to reduce the intensity of Level B behavioral harassment..

Use of Noise Attenuation Devices

To reduce impact on marine mammals, CALTRANS shall use a marine pile driving energy attenuator (i.e., air bubble curtain system), or other equally effective sound attenuation method (e.g., dewatered cofferdam) for all impact pile driving, with the exception of pile proofing.

Establishment of Exclusion and Level B Harassment Zones

Before the commencement of in-water construction activities, which include impact pile driving, vibratory pile driving, and mechanical dismantling of existing bridge, CALTRANS shall establish “exclusion zones” where received underwater sound pressure levels (SPLs) are higher than 180 dB (rms) and 190 dB (rms) re 1 μ Pa for cetaceans and pinnipeds, respectively, and “Level B behavioral harassment zones” where received underwater sound pressure levels (SPLs) are higher than 160 dB (rms) and 120 dB (rms) re 1 μ Pa for impulse noise sources (impact pile driving) and non-impulses noise sources (vibratory pile driving and mechanic dismantling), respectively. Before the sizes of actual zones are determined based on hydroacoustic measurements, CALTRANS shall establish these zones based on prior measurements conducted during SF-OB construction, as described in Table 1 of this document.

Table 1. Temporary exclusion and Level B harassment zones for various pile driving and dismantling activities

Pile Driving / Dismantling Activities	Pile Size (m)	Distance to 120 dB re 1 μ Pa (rms) (m)	Distance to 160 dB re 1 μ Pa (rms) (m)	Distance to 180 dB re 1 μ Pa (rms) (m)	Distance to 190 dB re 1 μ Pa (rms) (m)
Vibratory Driving	24	2,000	NA	NA	NA
	36	2,000	NA	NA	NA
	Sheet pile	2,000	NA	NA	NA
Attenuated Impact Driving	24	NA	1,000	235	95
	36	NA	1,000	235	95
Unattenuated Proofing	24	NA	1,000	235	95
	36	NA	1,000	235	95
Unattenuated	H-pile	NA	1,000	235	95

Impact Driving					
Dismantling		2,000	NA	100	100

Once the underwater acoustic measurements are conducted during initial test pile driving, CALTRANS shall adjust the size of the exclusion zones and Level B behavioral harassment zones, and monitor these zones accordingly.

NMFS-approved marine mammal observers (MMOs) shall conduct initial survey of the exclusion zones to ensure that no marine mammals are seen within the zones before impact pile driving of a pile segment begins. If marine mammals are found within the exclusion zone, impact pile driving of the segment would be delayed until they move out of the area. If a marine mammal is seen above water and then dives below, the contractor would wait 15 minutes for pinnipeds and harbor porpoise and 30 minutes for gray whales. If no marine mammals are seen by the observer in that time it can be assumed that the animal has moved beyond the exclusion zone. This 15-minute criterion is based on scientific evidence that harbor seals in San Francisco Bay dive for a mean time of 0.50 minutes to 3.33 minutes (Harvey and Torok, 1994), and the mean diving duration for harbor porpoises ranges from 44 to 103 seconds (Westgate *et al.*, 1995).

Once the pile driving of a segment begins it cannot be stopped until that segment has reached its predetermined depth due to the nature of the sediments underlying the Bay. If pile driving stops and then resumes, it would potentially have to occur for a longer time and at increased energy levels. In sum, this would simply amplify impacts to marine mammals, as they would endure potentially higher SPLs for longer periods of time. Pile segment lengths and wall thickness have been specially designed so that when work is stopped between segments (but not during a single segment), the pile tip is never resting in highly resistant sediment layers. Therefore, because of this operational

situation, if seals, sea lions, or harbor porpoises enter the safety zone after pile driving of a segment has begun, pile driving will continue and marine mammal observers will monitor and record marine mammal numbers and behavior. However, if pile driving of a segment ceases for 30 minutes or more and a marine mammal is sighted within the designated exclusion zone prior to commencement of pile driving, the observer(s) must notify the Resident Engineer (or other authorized individual) immediately and continue to monitor the exclusion zone . Operations may not resume until the marine mammal has exited the exclusion zone.

Soft Start

Although marine mammals will be protected from Level A harassment (i.e., injury) through marine mammal observers monitoring a 190-dB exclusion zone for pinnipeds and 180-dB exclusion zone for cetaceans, mitigation may not be 100 percent effective at all times in locating marine mammals. Therefore, in order to provide additional protection to marine mammals near the project area by allowing marine mammals to vacate the area prior to receiving a potential injury, CALTRANS and its contractor will also “soft start” the hammer prior to operating at full capacity. This should expose fewer animals to loud sounds both underwater and above water. This would also ensure that, although not expected, any pinnipeds and cetaceans that are missed during the initial exclusion zone monitoring will not be injured.

Power Down and Shut-down

Although power down and shut-down measures will not be required for pile driving and removal activities for reasons explained above, these measures are required for mechanical dismantling of the existing bridge. The contractor performing mechanical

dismantling work will stop in-water noise generating machinery when marine mammals are sighted within the designated exclusion zones.

Mitigation Conclusions

NMFS has carefully evaluated the applicant's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals;
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned, and
- The practicability of the measure for applicant implementation.

Any mitigation measure(s) prescribed by NMFS should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

1. Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).
2. A reduction in the numbers of marine mammals (total number or number at biologically important time or location) exposed to received levels of noises generated from ice overflight surveys, or other activities expected

to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

3. A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to received levels of noises generated from ice overflight surveys, or other activities expected to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).
4. A reduction in the intensity of exposures (either total number or number at biologically important time or location) to received levels of noises generated from ice overflight surveys, or other activities expected to result in the take of marine mammals (this goal may contribute to a, above, or to reducing the severity of harassment takes only).
5. Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.
6. For monitoring directly related to mitigation – an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Based on our evaluation of the applicant's proposed measures NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammals species or stocks and their

habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting Measures

In order to issue an ITA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth “requirements pertaining to the monitoring and reporting of such taking”. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area.

Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals:

1. An increase in the probability of detecting marine mammals, both within the mitigation zone (thus allowing for more effective implementation of the mitigation) and in general to generate more data to contribute to the analyses mentioned below;
2. An increase in our understanding of how many marine mammals are likely to be exposed to levels of noises generated from ice overflight surveys that we associate with specific adverse effects, such as behavioral harassment, TTS, or PTS;
3. An increase in our understanding of how marine mammals respond to stimuli expected to result in take and how anticipated adverse effects on individuals (in different ways and to varying degrees) may impact the

population, species, or stock (specifically through effects on annual rates of recruitment or survival) through any of the following methods:

- Behavioral observations in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);
 - Physiological measurements in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict received level, distance from source, and other pertinent information);
 - Distribution and/or abundance comparisons in times or areas with concentrated stimuli versus times or areas without stimuli;
4. An increased knowledge of the affected species; and
 5. An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

Proposed Monitoring Measures

(1) Visual Monitoring

Besides using monitoring for implementing mitigation (ensuring exclusion zones are clear of marine mammals before pile driving begins and power down and shut-down measures for mechanical bridge dismantling), marine mammal monitoring will also be conducted to assess potential impacts from CALTRANS construction activities.

CALTRANS will implement onsite marine mammal monitoring for 100% of all unattenuated impact pile driving of H-piles for 180- and 190-dB re 1 μ Pa exclusion zones

and 160-dB re 1 μ Pa Level B harassment zone, attenuated impact pile driving (except pile proofing) and mechanical dismantling for 180- and 190-dB re 1 μ Pa exclusion zones. CALTRANS will also monitor 20% of the attenuated impact pile driving for the 160-dB re 1 μ Pa Level B harassment zone, and 20% of vibratory pile driving and mechanic dismantling for the 120-dB re 1 μ Pa Level B harassment zone.

Monitoring of the pinniped and cetacean exclusion zones shall be conducted by a minimum of three qualified NMFS-approved MMOs. Observations will be made using high-quality binoculars (e.g., Zeiss, 10 x 42 power). MMOs will be equipped with radios or cell phones for maintaining contact with other observers and CALTRANS engineers, and range finders to determine distance to marine mammals, boats, buoys, and construction equipment.

Data on all observations will be recorded and will include the following information:

- (1) Location of sighting;
- (2) Species;
- (3) Number of individuals;
- (4) Number of calves present;
- (5) Duration of sighting;
- (6) Behavior of marine animals sighted;
- (7) Direction of travel; and
- (8) When in relation to construction activities did the sighting occur (e.g., before, “soft-start”, during, or after the pile driving or removal).

The reactions of marine mammals will be recorded based on the following classifications that are consistent with the Richmond Bridge Harbor Seal survey methodology (for information on the Richmond Bridge authorization, see 68 FR 66076, November 25, 2003): (1) No response, (2) head alert (looks toward the source of disturbance), (3) approach water (but not leave), and (4) flush (leaves haul-out site). The number of marine mammals under each disturbance reaction will be recorded, as well as the time when seals re-haul after a flush.

(2) Hydroacoustic Monitoring

The purpose of the underwater sound monitoring during dismantling of concrete foundations via mechanical means is to establish the exclusion zones of 180 dB re 1 μ Pa (rms) for cetaceans and 190 dB re 1 μ Pa (rms) for pinnipeds. Monitoring will occur during the initial use of concrete dismantling equipment with the potential to generate sound pressure levels in excess of 180 dB re 1 μ Pa (rms). Monitoring will likely be conducted from construction barges and/or boats. Measurements will be taken at various distances as needed to determine the distance to the 180 and 190 dB re 1 μ Pa (rms) contours.

The purpose of underwater sound monitoring during impact pile driving will be to verify sound level estimates and confirm that sound levels do not equal or exceed 180 dB re 1 μ Pa (rms).

Proposed Reporting Measure

CALTRANS will notify NMFS prior to the initiation of the pile driving and dismantling activities for the removal of the existing east span. NMFS will be informed of the initial sound pressure level measurements for both pile driving and foundation

dismantling activities, including the final exclusion zone and Level B harassment zone radii established for impact and vibratory pile driving and marine foundation dismantling activities.

Monitoring reports will be posted on the SFOBB Project's biological mitigation website (www.biomitigation.org) on a weekly basis if in-water construction activities are conducted. Marine mammal monitoring reports will include species and numbers of marine mammals observed, time and location of observation and behavior of the animal. In addition, the reports will include an estimate of the number and species of marine mammals that may have been harassed as a result of activities.

In addition, CALTRANS will provide NMFS with a draft final report within 90 days after the expiration of the IHA. This report should detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed due to pile driving. If no comments are received from NMFS within 30 days, the draft final report will constitute the final report. If comments are received, a final report must be submitted within 30 days after receipt of comments.

In addition, NMFS would require CALTRANS to notify NMFS' Office of Protected Resources and NMFS' Stranding Network within 48 hours of sighting an injured or dead marine mammal in the vicinity of the construction site. CALTRANS shall provide NMFS with the species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available).

In the event that an injured or dead marine mammal is found by CALTRANS that

is not in the vicinity of the SF-OBB construction site, CALTRANS would report the same information as listed above as soon as operationally feasible to NMFS.

Marine Mammal Monitoring Report from Previous IHA

The most recent marine mammal monitoring report describes the number of harbor seals and California sea lions that were observed within zones of influence (ZOIs) between January 8, 2014 and January 7, 2015 that could result in behavioral harassment. Most of the observations of harbor seals within the behavioral zones occurred within the Coast Guard Cove or Clipper Cove. Monitoring of the vibratory and demolition activity was only required for 20% of the time when those activities occurred but there was often a mix of impact and vibratory driving; therefore, monitoring was conducted from 20-100% of the time for some construction projects. Table 7 of the 2014 monitoring report (CALTRANS 2015) summarizes all observations and estimates the total exposures of marine mammals if there was 100% monitoring for each construction or demolition project as requested by NMFS. The estimated number of exposures is 144 harbor seals which is above the limit of 50 permitted under the Authorization. No sea lions, harbor porpoise or gray whales were observed.

Estimated Take by Incidental Harassment

Marine mammal take estimates are based on marine mammal monitoring reports and marine mammal observations made during pile driving activities associated with the SF-OBB construction work authorized under prior IHAs. Pacific harbor seals are the most commonly observed marine mammal (90% of observations during monitoring) near the east span of the San Francisco-Oakland Bay Bridge (SF-OBB). A harbor seal haul-out site is located on the south side of Yerba Buena Island (YBI) approximately 500 meters

from the SF-OBB's closest pier, pier E2, and seals are often observed foraging in Coast Guard Cove (just east of the U.S. Coast Guard Station on YBI), and within Clipper Cove between YBI and Treasure Island. A third foraging site that is used less frequently is approximately 250-500 meters southeast of YBI over a small trench running west to east along the bottom of the San Francisco Bay (Bay). In addition, harbor seals are regularly observed moving north or south under the original SFOBB between Piers E2 and E3, but infrequently east of Pier E4.

Harbor seal densities were calculated from 657 observations of harbor seals made during 210 days from 2000 to 2014 during monitoring for the East Span of the SFOBB. Two densities were calculated because of the higher density of seals observed foraging near YBI and Treasure Island. Foraging seals tended to remain in the area for several hours while transiting seals passing under the SFOBB were only observed 1-2 times. Therefore, densities east of Pier E3-E8 are much lower than the density than west of Pier E3.

The area of 2,000-meter threshold for the Level B behavioral harassment zone is 12.57 km² (12,570,000 m²). Half of that area to the west of Piers E3-E8 (6.29 km²) would have a higher density due to the harbor seals that are frequently observed in the three foraging areas. The range of seals observed within the foraging areas is 0-8 seals and the mean is 3.6 seals per day (combined for all three areas). The other half of the Level B harassment zone would have a lower density due to the infrequent observations of seals moving through the area. In addition the density of seals will vary with season therefore a density for the spring-summer season when seals spend more time onshore as they are pupping and molting and the fall/winter season. Table 2 shows estimated densities in the

high and low density areas during the fall/winter and spring/summer seasons.

Table 2. Expected harbor seal exposures for 2015 based on the area and seasonal density estimates, and number of days of pile driving.

Density Estimates	Behavioral Zone	Days of Pile Driving*	Harbor seal Density**	Exposures
Fall/Winter High Density	6.29 km ²	64	0.77	311
Fall/Winter Low Density	6.29 km ²	64	0.5	20
Spring/Summer High Density	6.29 km ²	64	0.3	121
Spring/Summer Low Density	6.29 km ²	64	0.02	8
Total Exposures	460 seals			

*It is assumed half of the pile driving days (64 days) will occur in each season.

**The area of the Behavioral Zone 12.59 km² is divided in half for the high and low density areas for each season.

This estimate for harbor seals is above the number of seals that have been permitted for take in previous IHAs that have been issued related to this project. However, the estimate presented here represents a more complete picture of the marine mammal density in the project area and the potential for exposure to project activities.

California sea lions are based on CALTRANS observations over 15 years of monitoring on the Bay Bridge, 2000 to 2014, including baseline monitoring in 2003 before bridge construction began. It should be noted that monitoring was not year round and there was little monitoring required during the period of mid-2010 to mid-2013 due to no pile driving. During 2013 and 2014, there was a large increase in pile driving to construct temporary falsework and for mechanical dismantling so the current estimates of animals do include recent monitoring. California sea lion numbers fluctuate from year to year. For example, in 2014 no sea lions were observed in the harassment zone, while in 2004, 36 sea lions were recorded near the Bay Bridge construction areas during pile driving. The larger number of sea lions in 2004 was probably related to a run of herring

that was near the Bay Bridge and sea lions were observed feeding on dense aggregations of herring in the area. Therefore, 50 sea lions is a conservative estimate.

Harbor porpoises were observed near the tower of the new Bay Bridge in 2013 and 2014. Each of those was a single animal and far out of their normal range for the Bay. If 1 or 2 pods of porpoises were to enter the construction area, then there might be up to 6 takes (pod size of 2-3 porpoises). Based on this NMFS believes that an allowed take of up to 10 harbor porpoises is conservative, but reasonable.

Gray whale take estimates were based on sighting reports collected by the Marine Mammal Center in Sausalito (the NMFS stranding facility for northern California). The Center collects whale sightings information from the general public, researchers, and the US Coast Guard. For the gray whale, 5 permitted takes is likely to be a conservative, but reasonable, estimate as they have never been observed within any of the behavioral zones during monitoring. Additionally, there has only been one report of a gray whale swimming under the original East Span of the Bay Bridge a number of years ago.

Based on these results, and accounting for a certain level of uncertainty regarding the next phase of construction, NMFS concludes that at maximum 460 harbor seals, 50 California sea lions, 10 harbor porpoises, and 5 gray whales could be exposed to noise levels that could cause Level B harassment as a result of the CALTRAN' SF-OBB construction activities. These numbers represent 1.5%, <0.01%, <0.01% and 0.10% of the California stock harbor seal, the U.S. stock California sea lion, the Eastern North Pacific stock gray whale, and the San Francisco-Russian River stock harbor porpoise, respectively (Table 3).

Table 3. Estimates of the possible maximum numbers of marine mammals taken by Level B harassment as a result of the proposed CALTRANS' SF-OBB construction activities

Species	Stocks	Level B takes	Percent population
Pinnipeds			
Harbor seal	California	460	1.5%
California sea lion	U.S.	50	<0.01%
Cetaceans			
Gray whale	Eastern North Pacific	5	<0.01%
Harbor porpoise	San Francisco-Russian River	10	0.10%

Analysis and Preliminary Determinations

Negligible Impact

Negligible impact is “an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival” (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (i.e., population-level effects). An estimate of the number of takes, alone, is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken”, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number and nature of estimated Level A and Level B harassment takes, the number of estimated mortalities, effects on habitat, and the status of the species.

To avoid repetition, the following discussion applies to the affected stocks of harbor seals, California sea lions, gray whales, and harbor porpoises, given that the best available information indicates that effects of the specified activity on individuals of those stocks will be similar, and there is no information about the population size, status, structure, or habitat use of the areas to warrant separate discussion.

Pile driving activities associated with this project, as outlined previously, have the potential to disturb or displace marine mammals. Even when mitigation measures are employed, the specified activities may result in Level B harassment from underwater sounds generated from pile driving. Takes could occur if individuals of these species are present in the Level B harassment zone while pile driving is occurring.

These low intensity, localized, and short-term noise exposures (i.e., 160 dB re 1 μ Pa (rms) from impulse sources and 120 dB re 1 μ Pa (rms) from non-impulse sources), are expected to cause brief startle reactions or short-term behavioral modification by the animals. These brief reactions and behavioral changes are expected to disappear when the exposures cease. The maximum estimated 160 dB isopleths from impact pile driving is 500 m from the pile, and the estimated 120 dB maximum isopleths from vibratory pile driving is approximately 2,000 m from the pile. There is no pinniped haul-out area in the vicinity of the pile driving sites. There is no critical habitat or other biologically important area for marine mammals in the vicinity of the proposed SF-OBB construction area.

The CALTRANS' specified activities have been described based on best estimates of the planned SF-OBB construction project within the proposed project area. Some of the noises that would be generated as a result of the proposed bridge construction and dismantling project, such as impact pile driving, are high intensity. However, the in-water pile driving for the piles would use small hammers and/or vibratory pile driving methods, coupled with noise attenuation mechanism such as air bubble curtains for impact pile driving. Therefore the resulting exclusion zones for potential TS are expected to be extremely small (< 35 m) from the hammer. In addition, the source levels from

vibratory pile driving are expected to be below the TS onset threshold. Given sufficient “notice” through use of soft start (for impact driving), marine mammals are expected to move away from a sound source that is annoying prior to its becoming potentially injurious. The high likelihood that marine mammal detection by trained observers under the environmental conditions described for the project area further enables the implementation of shutdowns to avoid injury, serious injury, or mortality. Therefore, NMFS does not expect that any animals would receive Level A (including injury) harassment or Level B harassment in the form of TTS from being exposed to in-water pile driving associated with SF-OBB construction project.

The project is not expected to have significant adverse effects on affected marine mammals' habitat and would not significantly modify existing marine mammal habitat. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (e.g., Thorson and Reyff, 2006; HDR, 2012; Lerma, 2014). Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving. In response to

vibratory driving, several species of pinnipeds (which may become somewhat habituated to human activity in industrial or urban waterways) have been observed to orient towards and sometimes move towards the sound. The pile driving activities analyzed here are similar to, or less impactful than, numerous construction activities conducted in other similar locations, which have taken place with no reported injuries or mortality to marine mammals, and no known long-term adverse consequences from behavioral harassment.

Repeated exposures of individuals to levels of sound that may cause Level B harassment are unlikely to result in hearing impairment or to significantly disrupt foraging behavior. Thus, even repeated Level B harassment of some small subset of the affected stocks is unlikely to result in any significant realized decrease in fitness for the affected individuals, and thus would not result in any adverse impact to the stocks as a whole. Level B harassment will be reduced to the level of least practicable impact through use of mitigation measures described herein and, if sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the project area while the activity is occurring.

In summary, this negligible impact analysis is founded on the following factors: (1) the possibility of injury, serious injury, or mortality may reasonably be considered discountable; (2) the anticipated incidents of Level B harassment are relatively small and consist of, at worst, temporary modifications in behavior; (3) the absence of any significant habitat within the project area, including rookeries, significant haul-outs, or known areas or features of special significance for foraging or reproduction; (4) the presumed efficacy of the proposed mitigation measures in reducing the effects of the specified activity. In combination, we believe that these factors, as well as the available

body of evidence from other similar activities, demonstrate that the potential effects of the specified activity will have only short-term effects on individuals and is not expected to impact annual rates of recruitment or survival.

Therefore, based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS preliminarily finds that the total marine mammal take from the CALTRAN'S SF-OBB construction project will have a negligible impact on the affected marine mammal species or stocks.

Small Numbers

Table 3 demonstrates the numbers of animals that could be exposed to receive noise levels that could cause Level B behavioral harassment for the proposed work associated with the CALTRANS SF-OBB construction project. These estimates represent 1.5% of the California stock of harbor seal population (estimated at 30,968; Carretta *et al.* 2014), <0.01% of the U.S. stock of California sea lion population (estimated at 296,750; Carretta *et al.* 2014), <0.01% of the Eastern North Pacific stock of gray whale population (estimated at 20,990; Carretta *et al.* 2014), and 0.10% of the San Francisco-Russian River stock of harbor porpoise population (estimated at 9,886; Carretta *et al.* 2014). These numbers constitute small percentages of the marine mammal stocks that may be taken.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, which are expected to reduce the numbers of marine mammals potentially affected by the proposed action, NMFS

preliminarily finds that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

There are no relevant subsistence uses of marine mammals implicated by this action.

Proposed Incidental Harassment Authorization

This section contains a draft of the IHA itself. The wording contained in this section is proposed for inclusion in the IHA (if issued).

(1) This Authorization is valid from May 18, 2015, through May 17, 2016.

(2) This Authorization is valid only for activities involving the construction and dismantling of the East Span of SF-OBB, California.

(3) Species Impacted and Level of Takes

(a) The species authorized for takings by incidental Level B harassment are the California sea lion (*Zalophus californianus*), Pacific harbor seal (*Phoca vitulina richardsi*), harbor porpoise (*Phocoena phocoena*), and gray whale (*Eschrichtius robustus*).

(b) The taking of any marine mammal in a manner prohibited under this Authorization must be reported within 24 hours of the taking to the Director, West Coast Regional Office, National Marine Fisheries Service, Telephone (562) 980-4000 and the Director, Office of Protected Resources, National Marine Fisheries Service, Telephone (301) 427-8400.

(4) The holder of this Authorization is required to cooperate with the National Marine Fisheries Service and any other Federal, state or local agencies monitoring the

impacts of the activity on marine mammals. The holder must notify Monica DeAngelis of the West Coast Regional Office (phone: (562) 980-3232) at least 24 hours prior to starting activities.

(5) Prohibitions

(a) The taking, by incidental Level B harassment only, is limited to the species listed under condition 3(a) above and by the numbers listed (see Table 3 of this **Federal Register** notice). The taking by Level A harassment, injury, serious injury, or death of these species or the taking by harassment, injury, serious injury, or death of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this Authorization.

(6) Mitigation Requirements

(a) Use of Noise Attenuation Devices

Pile driving energy attenuator (such as air bubble curtain system or dewatered cofferdam) shall be used for all impact pile driving of pipe piles, with the exception of pile proofing and H-piles.

(b) Establishment and Monitoring of Exclusion and Level B Harassment Zones

(i) For all in-water pile driving and mechanical dismantling activities,

CALTRANS shall establish exclusion zones where received underwater sound pressure levels (SPLs) are higher than 180 dB (rms) and 190 dB (rms) re 1 μ Pa for cetaceans and pinnipeds, respectively, and Level B harassment zones where received underwater sound pressure levels (SPLs) are higher than 160 dB (rms) and 120 dB (rms) re 1 μ Pa for impulse noise sources (impact pile driving) and non-impulses noise sources (vibratory pile driving and mechanic dismantling), respectively.

(ii) The sizes of the initial exclusion and Level B harassment zones for different types of activities are provided [See Table 1 in this *Federal Register* notice]. Once hydroacoustic measurements of pile driving and mechanical dismantling activities have been conducted, CALTRANS shall revise the sizes of the zones based on actual measurements.

(iii) NMFS-approved MMOs shall conduct initial survey of the exclusion zone to ensure that no marine mammals are seen within the zone for 30 minutes before impact pile driving and mechanical dismantling of bridge foundation. If marine mammals are observed within the exclusion zones, impact pile driving and/or mechanical dismantling activity of the segment shall be delayed until they move out of the area. If a marine mammal is seen above water and then dives below, CALTRANS must delay activities 15 minutes for pinnipeds and harbor porpoise and 30 minutes for gray whale. If no marine mammals are seen by the observer in that time it may be assumed that the animal has moved beyond the relevant exclusion zone.

(iv) If the time between pile-segment driving is less than 30 minutes, a new 30-minute survey is unnecessary provided the MMOs continue observations during the interruption. If pile driving ceases for 30 minutes or more and a marine mammal is sighted within the designated exclusion zone(s) prior to the commencement of pile-driving, the observer(s) must notify the Resident Engineer (or other authorized individual) immediately (see condition 5(e)).

(v) For pile driving activities, if a marine mammal is sighted within the exclusion zone after pile-driving has begun, CALTRANS must have a qualified MMO record the species, numbers and behaviors of the animal(s) and report to Monica DeAngelis at the

West Coast Regional Office, National Marine Fisheries Service, (phone: (562) 980-3232) within 24 hours of the incident.

(c) Soft Start

CALTRANS and its contractor shall implement soft start, i.e., starting the pile driving hammer at the lowest power setting and gradually ramp up to full power, prior to operating pile driving hammers at full capacity for both impact and vibratory pile driving.

(d) Power Down and Shut-down

(i) For mechanical dismantling of bridge foundation, construction activities that generate underwater noise must be powered down or shutdown if a marine mammal is observed within the established 180 dB or 190 dB re 1 μ Pa exclusion zones for cetaceans or pinnipeds, respectively.

(7) Monitoring Requirements

(a) General.

(i) The holder of this Authorization must designate a minimum of three biologically-trained, on-site MMOs approved in advance by the National Marine Fisheries Service's West Coast Regional Office, to monitor the area for marine mammals before, during, and after pile driving activities; and before, during, and after mechanical dismantling of marine foundations.

(ii) The National Marine Fisheries Service must be informed immediately of any proposed changes or deletions to any portions of the monitoring plan.

(b) Visual Monitoring

(i) CALTRANS shall implement onsite marine mammal monitoring for 100% of all unattenuated impact pile driving of H-piles for 180- and 190-dB re 1 μ Pa exclusion

zones and 160-dB re 1 μ Pa Level B harassment zone, attenuated impact pile driving of pipe piles (except pile proofing) and mechanical dismantling for 180- and 190-dB re 1 μ Pa exclusion zones.

(ii) CALTRANS shall also monitor 20% of the attenuated impact pile driving for the 160-dB re 1 μ Pa Level B harassment zone, and 20% of vibratory pile driving and mechanic dismantling for the 120 dB re 1 μ Pa Level B harassment zone.

(iii) Marine mammal monitoring shall begin at least 30 minutes prior to the start of the activities, continue for the duration of construction activities, and until 30 minutes after the construction activities.

(iv) Observations shall be made using high-quality binoculars (e.g., Zeiss, 10 x 42 power). MMOs shall be equipped with radios or cell phones for maintaining contact with other observers and CALTRANS engineers, and range finders to determine distance to marine mammals, boats, buoys, and construction equipment.

(v) Data on all observations must be recorded and include the following information:

- Location of sighting;
- Species;
- Number of individuals;
- Number of calves present;
- Duration of sighting;
- Behavior of marine animals sighted;
- Direction of travel;

- When and where in relation to construction activities did the sighting occur (e.g., before, “soft-start”, during, or after the pile driving or removal; distance from sound source; in or out of exclusion zone or Level B zone); and
- Other human activities in the area.

(c) Hydroacoustic Measurements

At the beginning of pile driving and mechanical dismantling of bridge foundation, CALTRANS shall conduct hydroacoustic measurements to verify the exclusion and Level B harassment zones.

(7) Reporting Requirements

(a) CALTRANS shall notify NMFS of the initial sound pressure level measurements for both pile driving and foundation dismantling activities, including the final exclusion zone and Level B harassment zone radii established for impact and vibratory pile driving and marine foundation dismantling activities, within 72 hours after completion of the measurements.

(b) Monitoring reports shall be posted on the SFOBB Project’s biological mitigation website (www.biomitigation.org) on a weekly basis if in-water construction activities are conducted. Marine mammal monitoring reports shall include species and numbers of marine mammals observed, time and location of observation and behavior of the animal. In addition, the reports shall include an estimate of the number and species of marine mammals that may have been harassed as a result of activities.

(c) CALTRANS shall provide NMFS with a draft final report within 90 days after the expiration of the IHA. This report shall detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine

mammals that may have been harassed due to pile driving and mechanical dismantling of bridge foundations. If no comments are received from NMFS within 30 days, the draft final report would be considered the final report. If comments are received, a final report must be submitted within 30 days after receipt of comments.

(8) Notification of Injured or Dead Marine Mammals

(a) In the unanticipated event that CALTRANS' construction activities clearly cause the take of a marine mammal in a manner prohibited by this Authorization, such as an injury (Level A harassment), serious injury or mortality (e.g., ship-strike, gear interaction, and/or entanglement), CALTRANS shall immediately cease construction operations and immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to *Jolie.Harrison@noaa.gov* and *Robert.pauline@noaa.gov* and NMFS West Coast Regional Stranding Coordinator (*Justin.Viezbicke@noaa.gov*). The report must include the following information:

- (i) Time, date, and location (latitude/longitude) of the incident;
- (ii) Type of activity involved;
- (iii) Description of the incident;
- (iv) Status of all sound source use in the 24 hours preceding the incident;
- (v) Water depth;
- (vi) Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- (vii) Description of marine mammal observations in the 24 hours preceding preceding the incident;

- (viii) Species identification or description of the animal(s) involved;
- (ix) The fate of the animal(s); and
- (x) Photographs or video footage of the animal (if equipment is available).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with CALTRANS to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. CALTRANS may not resume their activities until notified by NMFS via letter, email, or telephone.

(b) In the event that CALTRANS discovers an injured or dead marine mammal, and the lead MMO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), CALTRANS will immediately report the incident to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401, and/or by email to *Jolie.Harrison@noaa.gov* and *Rob.Pauline@noaa.gov* and NMFS West Coast Regional Stranding Coordinator (*Justin.Viezbicke@noaa.gov*). The report must include the same information identified in Condition 8(a) above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with CALTRANS to determine whether modifications in the activities are appropriate.

(c) In the event that CALTRANS discovers an injured or dead marine mammal, and the lead MMO determines that the injury or death is not associated with or related to the activities authorized in Condition 3 of this Authorization (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), CALTRANS shall report the incident to the Chief, Permits and Conservation Division,

Office of Protected Resources, NMFS, at 301-427-8401, and/or by email to *Jolie.Harrison@noaa.gov* and *Robert.pauline@noaa.gov* and NMFS West Coast Regional Stranding Coordinator (*Justin.Viezbicke@noaa.gov*) within 24 hours of the discovery. CALTRANS shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS. CALTRANS can continue its operations under such a case.

(9) A copy of this Authorization must be in the possession of all contractors and marine mammal monitors operating under the authority of this Incidental Harassment Authorization.

National Environmental Policy Act (NEPA)

NMFS prepared an Environmental Assessment (EA) for the take of marine mammals incidental to construction of the East Span of the SF-OBB and made a Finding of No Significant Impact (FONSI) on November 4, 2003. Due to the modification of part of the construction project and the mitigation measures, NMFS reviewed additional information from CALTRANS regarding empirical measurements of pile driving noises for the smaller temporary piles without an air bubble curtain system and the use of vibratory pile driving. NMFS prepared a Supplemental Environmental Assessment (SEA) and analyzed the potential impacts to marine mammals that would result from the modification of the action. A Finding of No Significant Impact (FONSI) was signed on August 5, 2009. The proposed activity and expected impacts remain within what was previously analyzed in the EA and SEA. Therefore, no additional NEPA analysis is warranted. A copy of the SEA and FONSI is available upon request (see **ADDRESSES**).

Endangered Species Act (ESA)

NMFS has determined that issuance of the IHA will have no effect on ESA-listed marine mammals, as none are known to occur in the action area.

Proposed Authorization

NMFS proposes to issue an IHA to CALTRANS for the potential harassment of small numbers of harbor seals, California sea lions, harbor porpoises, and gray whales incidental to construction of a replacement bridge for the East Span of the San Francisco-Oakland Bay Bridge in California, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. NMFS has preliminarily determined that the proposed activity would result in the harassment of only small numbers of harbor seals, California sea lions, harbor porpoises, and possibly gray whales and will have no more than a negligible impact on these marine mammal stocks.

Dated: April 23, 2015.

Perry F. Gayaldo,

Deputy Director, Office of Protected Resources,

National Marine Fisheries Service.

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